



WILL'S WONDER-BOOK.

I.

JUST wish I had another story as good as that," exclaimed Will, as he turned the last page of "Gulliver's Travels."

"I dare say I can find you something as interesting, and more profitable, perhaps," said grandma, looking down at the young gentleman lying in the grass at her feet.

"I know what you'll advise, — 'Sandford and Merton,' 'Harry and Lucy,' or the 'Sequel to Frank.' I'm tired to death of 'em all, 'specially that prig of a Harry, with his everlasting barometer. I like 'Robinson Crusoe,' 'Swiss Family,' and 'Gulliver,' — all about queer places, and people, and the way they live," answered Will, with his boots higher than his head.

"I could tell you about places, and creatures as curious and interesting as the Liliputians, whom you like so much, if you cared to hear of them," replied grandma, placidly.

"Can you? Where are they?" asked Will, surprised.

"You are lying on one of them; and there is another just behind Polly."

"Hullo!" cried Will, rolling over to look, while Polly stared about her, with a wild expression.

"Yes; there are two wonderful cities, full of busy, brave, and accomplished little people, about whom you know nothing; though you see them every day," added grandma, nodding wisely.

"I know what she means! I see 'em!" cried Polly, who "sat on a tuffit, like Miss Muffit," — not eating curds and whey, but making a pepelum for her doll Seraphina.

"An ant-hill and the beehive are all I see," said Will, following Polly's quick eyes. "We know about them, of course."

"Do you? Tell me how much?"

"Well, ants live in the ground, and get in sugar-buckets, and bite; and bees make wax and honey, and buzz, and sting like fury," replied Will, briskly.

"And how do they make their houses, and live, and work, and raise their little ones?" asked grandma.

"Oh, they — that is, I believe — well — really, I don't know," was Will's rather unsatisfactory answer.

"Shall I tell you?"

"If you please, grandma;" and, feeling somewhat abashed by his failure, Will meekly composed himself to listen, chewing grass meantime, like a ruminating calf.

"Tell about the bees first. I found out quickest; and I always liked bees, ever since I was a mite of a girl, and used to say about the 'Little biddy bee,' and 'How skittly she builds her cell,'" said Polly, — sewing away like a matron of forty with a large family to provide for, instead of a ten-year-old, with only one doll, a cat, and canary, dependent upon her.

"We'll try a bit, and see how you like it;" so, settling her knitting, grandma began. "If we could enter that little door, we should find a city full of busy inhabitants, — a kingdom which has been prettily described by a certain famous William, who knew more about them than our Will, though he uses the word 'king,' instead of queen, to suit the character who speaks:—

"'They have a king, and officers of sorts;
Some, like magistrates, correct at home;
Others, like merchants, venture trade abroad;
Others, like soldiers, armed in their stings,
Make raid upon the summer's velvet buds;
Which pillage, they, with merry march,
Bring home to the tent-royal of their emperor;
Who, busied in his majesty, surveys
The singing masons, building roofs of gold;
The civil citizens kneading up the honey;
The poor mechanic-porters crowding in
Their heavy burdens at the narrow gate;
The sad-eyed justice, with his surly hum,
Delivering o'er to executors pale,
The lazy, yawning drone.'"

"Why, do they do all those things *really*?" asked Will, looking at the hive, as if interested already.

"Yes; there are workers of all kinds, and each does his part faithfully. When put into a new hive, the bees at once begin to lay the foundation of their combs, which they prepare with astonishing quickness. Then, they make the wonderful little cells;

which, being six-sided, waste no room. They are of thin wax, polished and smoothed by the bees' jaws, and finished with a ring round the edge, for strength, like the threshold of a door. The combs are generally arranged with streets between, so the bees can go up and down: they are just wide enough for two bees to pass one another. They often have cross-streets, which are covered. They stop up all cracks in the hive with what is called bee-glue, which they collect from poplars, willows, and other trees. If a snail, or any creature too large for them to manage, gets in, they seal it up in a thick covering of glue; and so keep the air pure, and render the invader harmless.

"You know how they get the honey, by running their long tongues into flowers. This honey goes into a little bag, or stomach, which they fill, and empty into the cells, the mouths of which are closed up with waxen lids. Some honey-pots are left without covers, for food in bad weather; but they never touch these when the weather is fine, and fresh food can be got."

"Dear me! — think of living among hundreds of honey-pots, and not touching them! I shouldn't make a good bee," said Polly, thinking of the lumps of sugar that daily tempted her in the china-closet.

"They are taught obedience, and are not gluttons," replied grandma, with a little shake of the head, which Polly understood perfectly well.

"Please, go on, ma'am," said Seraphina's little mother, pricking her fingers, and puckering the pepelum, in her flurry.

"The queen-bee is larger than the others, and lays all the eggs, — many thousands, sometimes. These eggs are laid in the cells, and, a day or two after, the grubs are born, — little worms, rolled up in rings. The common bees turn nurses, and take care of the babies with the greatest tenderness, feeding and tending them for about six days, — when they are fully grown. Then they shut them up, to keep them safe; and they line the walls of the cells with silken tapestry, in which they undergo the last change. When they first come out winged insects, they are very weak; but, in a few hours, they become strong enough to fly off and go to work."

"Don't you wish our babies grew up, and got useful, as quick as that? What lots of trouble it would save," said Will, — who, boylike, didn't see the charms of "little squallers," as he called very young men and women.

"Mothers and grandmas would lose a deal of pleasure, if they

did," said the old lady, who had petted both children ever since they were born. "Well, my dears, these little friends of ours are loyal to death, and cling to their queen through everything. If she happens to die, all work stops till a new queen appears. If she is taken away, they follow, if they can, and will not leave her. A man tried the experiment of cutting off a queen-bee's wing, and keeping her where the rest could follow. They gathered round her; and, as she could not fly away, they preferred to stay and starve, rather than quit her. For five days, they lived without food, but not one left her; and, at last, all lay dead, with the dear queen still in their midst."

"They rallied round the flag like good ones, didn't they? I like 'em for that;" and Will sat up, to watch a burly brown bee hard at work in a dandelion close by.

"I heard of a man who had the power of charming bees, so that they obeyed him, and never hurt him in the least. They would swarm all over his head and shoulders quite harmlessly, and let him do what he liked. He played general with them, arranging them on a table, in regiments and battalions, where they waited till he uttered the word of command, when they began to march, rank and file, like regular soldiers. He taught his liliputians politeness also, for none ever stung the people who came to see the curious show."

"I'd like to have seen that!—it must have been fun. Wonder if I could do it?" said Will, eyeing the beehive, wistfully.

"I advise you not to try, till you learn the charm. There are various kinds of bees, you know. Polly would like the poppy-bee, who makes her nest in the ground, burrowing down about three inches. At the bottom, she makes a large, round hole, and lines it splendidly with the scarlet leaves of the wild poppy. She cuts and fits the pretty tapestry, till it is thick and soft and warm, then partly fills the cell with honey, lays an egg, folds down the red blankets, and closes up the hole, so it cannot be distinguished; and there, in its rosy cradle, with food to eat, and a safe nook to rest in, she leaves her baby-bee to take care of itself."

"How cunning! I'll line Phena's cradle with red flannel right away," cried Polly, who *did* like the poppy-bee.

"The leaf-cutting bee makes her cells of green leaves, shaping them like thimbles. These little jars she half fills with a rose-colored paste of honey and pollen from thistles, lays her eggs, and covers the pots with round leaf-lids, that fit exactly. The mason-bee

makes its nest of mud or mortar. It looks like a bit of dirt, sticking to a wall, but has little cells within. The mother-bee does all the work, sticking little grains of sand and earth together with her own glue. The carpenter-bee bores holes in posts, and makes her cells of sawdust and glue. The carding-bees live in holes, among stones and roots, making nests of moss, lined with wax, to keep the wet out, with a long gallery by which to enter. They find a bit of moss, and several bees place themselves in a row, with their backs toward the nest ; then the foremost lays hold of the moss and pulls it up with her jaws, drives it with her fore-feet under her body as far toward the next as possible. The second does the same ; and in this way, tiny heaps of prepared moss are got to the nest by the file of four or five, and others weave it into shape."

"They must look as if they were playing leap-frog. Here, old fellow, give us a back !" cried Will, with a laugh, and a leap over the brown bee still tumbling about in the dandelion.

L. M. ALCOTT.

THE FLOWERS OF SPRING.

FROM THE GERMAN.

WHERE are all the flowers today ?
Sleeping in the ground are they,
Covered in their snowy bed —
(Lest you wake them — softly tread).
When our loving Lord, in spring,
Doth the golden sunshine bring,
The snowy blanket off he'll take,
And say — " My children must awake ! "
Then their little heads peep, shy,
As they come out cautiously ;
Then springs forth each flower-cup,
And their tender eyes look up.

S. W. LANDER.



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WILL'S WONDER-BOOK.

II.

TELL about the ants, grandma. I've looked into a beehive, and seen the busy folks at work ; but I never saw the inside of an ant's house," said Polly, as Will lay down again.

"It is a city, my dear, full of little houses, or cells, streets, bridges, galleries, and gates, built of earth, rushes, grass, and tiny twigs, in the most wonderful manner. There are many roads leading up to the air, and on fine days, the gates stand open ; at night, the sentinels shut them, also in rainy weather ; and so keep all safe and snug. In the lower rooms, they keep their young when it is cold ; but whenever the sun shines, the faithful nurses carry the ant-babies up to the warm, light rooms above, just as our babies are taken out in sunny weather."

"Really ?" cried Will.

"Yes, really ; and many other things do these interesting creatures do very like us. The mother-ant has pretty gauze wings at first, and flies about in the open air very gaily for a time. But when the little ones are born, she pulls off her fine wings, stays at home, and takes care of her family, like a wise and faithful mother. She can't take all the care, because she often has several thousand children ; so, a great many nurses are needed ; and Mrs. Ant is more fortunate than we often are in getting good ones. So

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devoted are the attendants, that they guard the eggs, from the time they are laid till the perfect ant flies away. They put the eggs in heaps in the cells, moving them to warm or cool places, as they think best, and often brood over them in damp weather. When the little grubs are hatched, they feed, wash, and tend them carefully. Not a very easy task, you may see, to take care of four or five thousand babies at once."

"I hope they don't all cry at once," said Will. "Wouldn't there be a racket, if they did?"

"No ; they are good babies, and don't worry ; because their nurses give them simple food, plenty of exercise, and don't spoil them as we spoil our babies," answered grandma, shaking her head, for she thought the old ways best.

"What do they eat and do?" asked Polly, forgetting to read, in her interest in the ant-lings.

"The nurses feed them, at first, with a sweetish fluid from their own bodies, and afterward with various things, putting the food into the little mouths, as birds feed their young. If any one disturbs the nests, these devoted nurses think only of saving the young, and may be seen running away with the tiny white eggs, or grubs, in their mouths. I read of a faithful nurse who got cut in two during some accident which happened to the nest ; and so bent on saving her little charges was she, that the half of the body on which the head remained actually carried ten eggs to a place of safety before it died."

"Well, that ant was a regular brick !" cried Will. "You don't like slang, grandma ; but I *must* say 'brick' this once, for no other word is good enough for that plucky little nurse."

"I hope Betsy would do as much for us, if our house tumbled down," began Polly, soberly ; but went off into a giggle, at the idea of old Betsy's head trotting away with the baby.

"Let me tell you one more thing about the nurseries, and then we will go on to the battles and language and games of our friends," said grandma, watching the two attentive faces before her with the kind old eyes that twinkled behind her glasses. "After a while, the grubs spin themselves into cocoons, and stay there till they are perfect ants. When it is time for them to come out of their yellow cradles, the nurses help unfold the silken covers, as mamma undoes baby from his blankets, and take the young ones up from their long naps. They wash and brush them, spread their wings, lead them through the winding streets, as if teaching them to walk ; and when

they are strong enough, the nurses follow them to the plants outside, feed them for the last time, kiss, and say good-by. And as the young ones fly away, the faithful creatures linger, as if they found it hard to part from the nurselings they have loved so well."

"Polly's crying!" said Will.

"No I ain't," returned Polly, winking more than was necessary; for she *was* rather touched by the tenderness of the little creatures whom she had never known, or cared to know, till now.

"I shan't walk on ant-hills any more," she said, with a small sniff.

Will said nothing, but lay leaning over the busy workers in the grass, thinking of the happy little homes below, and privately determining that he never would disturb his small neighbors again.

"I forgot to tell you," continued grandma, "that there were three sorts of ants,—the males, the females, and the neuters. The first two are kings and queens, and live in state; the others are the workers and soldiers. The first have no wings; but the workers have strong legs and feelers, for building, pulling, and running errands. The soldiers have large, sharp jaws for biting, and stings, also; beside little poison-bags, from which they throw a venomous fluid when attacked. Each sort do their parts, and all goes smoothly. The fathers soon die, or fly away; the mothers lay the eggs, and oversee the housekeeping; the workers take care of the babies, build, find food, and wait on the queen; while the soldiers guard the gates, defend the city, and march out to fight the neighboring tribes when wars occur."

"Tell about the battles. I like that part," said Will, like a true boy.

"They are very brave; for these little fellows will attack ants much larger than themselves, and fight gallantly, till they win or die. When they once take hold, they will be torn limb from limb before they let go; and after a battle, the victors may be seen with their enemies' heads fastened to their feelers, or legs, for they can't get them off; and, proud as they may be of them, they must be very inconvenient. To these brave and bustling mites, a foot of ground is a territory worth fighting for; the body of a beetle, a cargo of straws, or a drop of honey, are possessions of great value. The males and females don't fight; but the neuters have great battles with their neighbors, and sometimes with each other. Idle ants are driven out of the city, and have their heads cut off before the people, as a warning. But the famous battles are between

different communities of the same species. Rival cities, like the Rome and Carthage you read of, Will, send out their armies to settle some dispute ; and one may see them meet half-way on a battle-field of two or three feet square. Led by their generals, some seize each other in their powerful jaws ; some make prisoners, who are afterward used as slaves in the cities of their enemies ; others, joined together by legs or jaws, in long strings, pull and drag in opposite directions, till one side gets stronger than the other, when the chain breaks, and all fight again, two and two. These battles last for days, and at night, each army retires to its own city, only to march out again with fresh courage in the morning. So they keep it up, till one side yields, or a rain quenches the feud, when they go home, and forget all about the quarrel."

"I'd like to see an ant-battle, if it was a good lively one, and the generals didn't get the men into scrapes," said Will, who sometimes read the newspapers.

"I pity the poor ant-slaves, and hope they got away after a while," added Polly, who had given a dollar to the Freedmen's Aid Society.

"British and American ants don't make slaves, the books say, and I am glad of it," replied grandma. "One curious thing I must tell you ; and that is, that the ants not only have slaves, but cows, or rather another species of insect, from which the ants get a sweet fluid, of which they are very fond. I don't know whether all ants do this ; but Huber tells us that some ants haunt the trees where the aphides go to get sweet sap, and as fast as the little tubes on the bodies of the aphides are full of honey, the ants draw it out, and carry it home for their young, as we do milk."

"Well, that's the funniest thing I've heard yet. Cows, with wings ; and ants going a milking, up trees !" Will lay back in the grass, and shouted ; and Polly's eyes were rounder than ever with wonders at the discoveries she was making.

"Laugh away, my dear, but it is true ; and ants often have their own cows, and guard them, and build walls round them, as we fence in our pastures. Certain beetles are kept by German ants, who have droves of these yellow cattle, and take good care of them," added grandma.

"It sounds like a fairy story," said Polly, with a long breath. "Do the ants talk, and have schools, and do everything else, as we do ?"

"Not everything, as we do ; but they talk somewhat as the deaf

and dumb do, with their feelers or hands. Careful observers say, that when the ants want to warn others, they run and strike sharply against them. If one finds something good to eat, it hurries to the others, and waves its antennæ, as if to say, 'Come, and taste it.' If the military ants wish to give the order to march, they touch each other on the trunk and forehead. In a fight, if two friends mistake and attack one another, they soon beg pardon by caressing each other. When the queen walks through the city, her people show their joy by tapping her lightly, dancing on their hind-legs before her, and carrying her on their feelers; and when two meet, after being long parted, they seem to shake hands, kiss, and embrace most affectionately."

"Little dears!" exclaimed Polly; and down she went, to watch the small people, some of whom had climbed up the tall grass-blades, as if to listen, and be sure that grandma made no mistakes in telling their history.

L. M. ALCOTT.

THE LITTLE CAPTIVES.

THERE came a little humming-bird,
Upon a summer's day,
Buzzing about some leaves and flowers
That on the table lay.

A lovely, tiny humming-bird,
Scarce bigger than a bee;
I put a wine-glass over him —
My prisoner was he.

Small space was there for fluttering wings, —
Gay, golden wings, and green;
And leaves and flowers lose their charm
Through prison-window seen.

Poor, pretty little humming-bird,
He did not like to stay;
And so, I lifted up the glass,
And let him fly away.



WILL'S WONDER-BOOK.

III.



“WHAT will you tell us about today, grandma?” said Will, as the three sat, as usual, under the elms, just before tea.

“Well, I don’t know,” began the old lady; but, before she got any farther, accident suggested a subject; for, as if Polly really was Miss Muffit, “a big black spider” suddenly “sat down beside her,” and caused her to tumble off her grassy seat, with a loud “Ugh! take the horrid thing away; I hate ‘em!”

“I’ll scrunch him;” and Will lifted his bat for the fatal blow, when grandma whisked the poor thing into her handkerchief, and took him out of danger. “Wait till I tell you something about him, and his relations; then we’ll see about killing him.”

So, Polly settled herself again, after carefully tucking up her skirts; and Will laid down his bat, feeling sure he should want it directly.

“In the first place, spiders have four, six, eight, or ten eyes—”

“That’s the reason they see, and cut away before you can get a good hit at them,” interrupted Will, glad to know that his failure on several occasions had not been entirely owing to his own want of skill.

“Then they are little silk factories, and spin away, all within themselves. The silk is made from the juices of their food, prepared in a sort of laboratory they have; then, it passes to a silk reservoir, ready for use; and, when the creature wants a thread, it comes through the four or six tubes, or spinnerets, as they are called. There are many smaller tubes; and threads of all sizes are made, to suit the want of the worker. These threads are finer than any human skill can make, and they are used for the divisions of the micrometer, an astronomical instrument; though some wise observer says it takes four millions of the threads to make one as thick as a hair.

"In some spiders, the threads are so strong, that small birds, as well as insects, are hung up by them ; and Brazilian spiders roll up leaves for nests, and suspend them by cords of their own making. The Bird-Catcher spider is a very large one ; its body is as big as a twenty-five-cent piece, covered with black and yellow hair ; and its long, strong legs are as stout as a bird's quills. They make nests in hollow trees, in rocky crevices, and under dead leaves. In South America, they are still larger, being able, Dampier says, to cover eight or ten inches by spreading their legs ; and their claws are so strong, that they are often used for toothpicks, and are considered good for toothache. This sort doesn't spin webs to catch its food, but hides, and springs on its prey, killing it with one sharp bite."

"Oh, dear ! I hope we don't have that kind here," cried Polly, curling up her feet, and looking anxiously at the imprisoned spider ; for grandma had pinned the handkerchief against the tree.

"No ; we have small ones of that species, but they are rare ; and don't hurt people, I believe. In Florida, there is a sort of spider which is eaten by the Indians ; and some one tells a funny story of having preserved a bottle-full in whiskey, to study, when one of the chiefs paid him a visit, and ate up the spiders, with great relish, thanking him for the treat."

"What a treat !—'pickled spiders !' Was there ever such a mess ?" and Will turned up his nose in high disgust.

"As a contrast to these rather disagreeable fellows, there is the Golden Lactrodecta. She is a regular little fairy, delicate and pretty, and looking as if made of glass and gold. Her eyes and claws are black ; a dark orange stripe runs down her back, and her body looks as if she wore black lace over her yellow-satin gown."

"How nice she must look," said Polly, admiringly ; for she liked fine clothes, as most little girls do.

"This spider is very nimble and small, and not very common. Her tiny, brilliant web, spun between grass-blades, waves to and fro, shimmering in the sunshine ; and there she sits, like a little queen, in her golden suit, daintily eating the midges and gnats with which her table is spread. But, as soon as she dies, all her beauty fades ; and, in an hour, she is only a tiny, dull, black speck. There is another little member of the spider family, which you will like to hear about. I won't give you the long name, but tell you how bravely she goes to sea. She appears toward autumn, when the leaves begin to fall, and is seen on rivers and running streams, at

night and morning. She places herself on a fallen leaf, which she bends up with strong cables, in such a skilful way, that no wind upsets it. In this she floats away, catching insects as her boat sails with the tide. She is just the color of the leaf, and one must look closely to see her ; for she is very quick, and it is so difficult to catch her, that some people think, that, like the gossamer spider, she can float away on the wind. At the point of the leaf, she spins a little tent to sleep in, and here she keeps a silken ball, full of tiny, yellow eggs. One seldom sees all this, but it is a curious sight ; and one can't help wondering what becomes of the solitary little sailor, sailing down the stream to some new country, with her babies rocked by the gentle swaying of her leafy boat."

"I'd like to see that ship, and its rigging, and crew," said Will, who felt his respect for spiders much increased by this nautical fact.

"I had a spider once, who lived in a corner of my room, and I used to amuse my friends with her. If I went toward her with my hand up, as if to brush her away, she would whirl and vibrate, faster and faster, till you no longer saw her, and would fancy she had dropped. Then, if we stepped back, she would slowly reappear, looking as if nothing had happened. My servant was much troubled because I left her there, and often threatened to sweep her down. So, I put her in a glass (my spider, I mean, not my girl), and painted a web and spider in the corner, and told Jane to make it tidy there, if she could. She joyfully whisked her broom, and looked bewildered when neither web nor spider fell, and couldn't understand the joke, till she had felt the walls."

"What became of the old spinner?" asked Will, after he had enjoyed grandma's trick.

"I kept her under a glass, and watched her. She was a very common, drab spider, with white spots and long legs. She glued her eggs together in a silky bag, and always carried them about in her mouth. She didn't eat much, but hung from the top of the glass, swinging to and fro, as if getting her little ones to sleep. At the end of two weeks, she hung the bag by a strong thread, and, dropping to the bottom, lay there, waiting her fate. Soon, two or three hundred little spiders came sliding down, and, pouncing on the poor mother, ate her up. Then, they turned and ate each other ; though I put in gnats, and bugs, and flies, for them. Such little cannibals, I never saw ; for they went on, till there were but five spiderlings left. These moulted, and ate up their skins ; and then went at each other again. I was so angry at them, that I put a big

one in, who finished them ; and that was the end of this bloodthirsty family. I couldn't understand the cause of this seeming cruelty to each other ; but, as so many are born at once, it is probably well for us that few live. One thing is to be said in praise of them ; the mother is the most faithful of parents, and never ceases to watch and guard the ball of eggs. She holds it under her with four legs, and fights stoutly with the others ; and, when the battle is over, she carefully examines her treasure, often spinning a new cover, and then takes it in her mouth again, to watch and wait with untiring patience, till her undutiful little ones are born."

"Poor Mrs. Spider ! If I had one, I'd take her out before the bad children ate her up ; and I'd keep her all safe, and pet her with fat worms and nice flies," cried Polly, warmly.

"I thought you hated spiders," said grandma, with a sly smile.

"I don't now, only the big, fierce ones. I didn't know they were so pretty and sensible ; and I'm going to have a spider-bottle, and see them spin, and eat, and all the other queer things they do."

"Isn't there a kind that makes people fly about, and dance like mad, when they bite them ?" asked Will, wishing to show off a little for Polly's benefit.

"Yes, the Tarantula ; the bite isn't poisonous, and the spider can be tamed till it eats out of the hand of its keeper. The story goes, that when a person is bitten, they grow sick, and sad, and weak, till music is made for them, when they dance wildly till they are cured. I believe there is no truth in it ; but a story is told of a man who hired a girl, at Naples, to try the effect of a bite. She agreed ; and, after a bottle, with the spider in it, had been applied to her arm, and a sharp prick assured her that she was bitten, she sat a little while, looking pale and wild, then suddenly she flew up, and danced frantically, till she could skip no longer ; when she sank down, declaring she had never been so badly bitten before, and was afraid she would not recover. Then the man showed the bottle, and told her that there was no spider in it, but that he had pinched her arm ; and all the rest was her own imagination or cunning."

"That was a good joke ! But, why don't people make things out of spider-silk, as they do out of cocoon-silk ?" asked Polly.

"People have tried, and, I dare say, will succeed some day, since greater wonders have been wrought. A Monsieur Bon made a few pairs of gloves and stockings ; but they cost so much, he could not go on. It was found, that two hundred and eighty spiders did not yield more silk than one industrious silk-worm ; so the experiment was given up."

"Yes ; in my 'Gulliver,' I read how he went to a place where a spider-man told him he would soon have spiders trained to spin silk of all colors, for he was going to feed them on food that would make them do it," cried Will, firmly believing that Gulliver was a most reliable authority.

"Miracles as curious as any in fairy tales sometimes come to pass ; so, we may yet wear spider-silk, and teach them to spin for us as industriously as they do for themselves. Now, what shall we do with our prisoner ?" asked grandma.

"Let him go," said Will, at once.

"I want a look at it first, just to see if it's one of the pretty ones," added Polly, peeping carefully into the handkerchief, hoping to find the lady in black lace and gold-colored satin.

A big black fellow darted out, ran straight up grandma's arm, and hid in the rough bark of the elm, after he had paused an instant on her white cap to wiggle his long legs, as if waving an adieu with a polite but inaudible —

"Thank you, ma'am ; thank you."



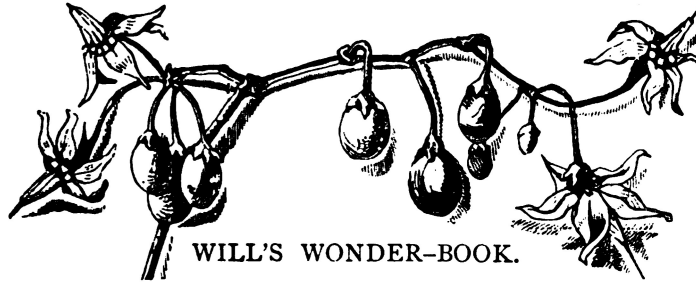
THE LOGGERS ; OR, SIX MONTHS IN THE FORESTS OF MAINE.

(Continued from the May Number.)

MONUMENT BROOK.



AY 19th. Another favorable day ; and the men in fine spirits, as we are moving rapidly forward. At night, there are several watches, as the work constantly moves on. "No stoppin'," Jim says, "until the logs are in hailin' distance of the mills." My hour last night, for watch and work, was two ; and as I "crept out of the cedars," I found the moon shining brightly upon waters so clear, you could see the pebbly bottom. As I slowly moved around and around, taking in the whole beautiful scene, I longed for your talent at sketching, that I might make a picture for our menagerie. Think of us, alone on this grand, broad lake ; the large circular



IV.



VE got him! Isn't he a fat one?" cried Will, slowly opening his hand, to show the plump, black cricket he had just caught.

"Don't hurt him. I like crickets; they make such a pretty noise, and have such queer, stiff tails," said Polly, looking at the little head which peeped through her brother's fingers.

"That reminds me of one of your funny mistakes when you were a little girl," said grandma, smiling. "You came to me one day, with your eyes staring, and told me that the cook kept a big, black spider, with a stiff tail, in her closet. I went to see the wonder, and found it was an old-fashioned iron spider, for cooking."

"That's just like Polly! she's so stupid. I guess if you told her to bring you a cricket, she'd go and get one of these fat fellows; wouldn't you, Poll?" asked Will, who never could resist teasing his sister.

"Yes, I should, if she did it now; for I want to know about them," returned Polly, trying to look at him with dignified indifference.

"Are they interesting chaps, grandma?" said Will, holding his prisoner fast, in spite of his struggles.

"I think so; and I'm as fond of them as Polly. The house-cricket is a social little thing, and likes to live in the crannies of kitchen chimnies or bakehouses. Most insects sleep in winter, or die as soon as summer is over; but these always live in a warm region, as it were, and are always brisk and merry. A good hot fire is like the dog-days to them, though snow may lie deep and cold outside. They are often heard by day; but usually take their walks abroad by night, and have fine concerts on the warm hearth when every one is asleep. Living in such a hot climate makes them a thirsty set; and they are often found drowned in the

water-pails or milk-pans, where they have gone to drink. Whatever is moist delights them ; and they sometimes gnaw holes in wet woollen stockings, or clothes hung by the fire. They eat, also, almost anything they find, — yeast, salt, bread, whatever is left, where they can get at it. They have wings, but seldom use them, except for travelling, when they move through the air in waves, rising and falling as they go. When running about a room in the dark, if any one enters with a candle, they give a shrill chirp, as if warning one another, and all scamper to their holes in a great hurry. It is said, that in some places, they are collected, and fed in a warm oven, and sold to people, who hang them up in little wicker cages, as they like their noise, and think it lulls them to sleep."

"What makes the noise?" asked Will, who always liked to know why and how things were done.

"I'm not sure, whether it is a little membrane under the wing, which opens and shuts, or a joint of the leg, rough, like a saw, with which they rasp when they please. The noise can be made after they are dead, by moving this tendon, they say ; and I've heard that crickets will chirp, even when their heads are off. But I should be sorry to see any one try such a cruel experiment."

"Is this a house-cricket?" asked Polly, as Will suddenly let his prize hop away, instead of pulling his legs off, as he had intended, before the old lady spoke of cruelty.

"No, dear ; this is a field-cricket. This sort live in burrows, or holes in the ground, where they lay their eggs, about the size of caraway-comfits, and guard them carefully. The nest is like a little fort, with fortifications, avenues, and sometimes a ditch all round it. They have strong jaws, with which they fight each other, but never hurt us. They eat the plants that grow about the fields ; and pass the evenings, sitting and singing at their doors, like cheerful little neighbors.

"Locusts belong to this class of insects, and in some countries do great damage ; for the ground will be covered with them, for miles : and the noise they make in feeding on the leaves and grass can be heard like a loud rustling. In Asia, the people make great clouds of smoke, to drive them off ; and dig trenches round their fields, where the locusts fall in, and are buried. Sometimes there are so many, that it looks as if a dark cloud was passing overhead ; for they have a leader, and follow in immense swarms, wherever he goes. They march like an army, over fields and woods, destroying every green thing they touch ; but at night, they rest ; and at this

time, the people try to kill them. In Africa, they are eaten ; some persons dry, pound, and boil them in milk ; others broil them over the coals, and consider them good food. Our locusts don't do much harm, I believe, as we have but few in this damp, cold climate."

"I don't like the noise they make as well as the crickets' chirp ; and I'm going to make a paper cage, and put some crickets in it, to sing lullabies for me," said Polly, whose fancy was taken by that fact.

"I hope you will find them easier to catch than I did once," said grandma. "Many years ago, I was travelling in Italy ; and on Christmas Day, after a picnic in an orange-grove, I went to my room, very tired. But I did not get my rest very soon ; for, just as I was about to put out my candle, something bounced on my head. I looked in the glass, and beheld an immense brown cricket, promenading over my night-cap. He looked so home-like, I was very glad to see him ; but, as I didn't care about his prancing round the room to disturb my sleep, I tried to catch him. That didn't suit Mr. Cricket ; and he gave a great leap to the clock, and stared at me with his big eyes quite reproachfully. I made a rush at him, and he skipped into the wood-basket, turning heels over head as he went. I was determined to have him ; so I rummaged among the pine cones after him ; when, bang ! up he came against my very nose, and was off like a shot. I hunted him all over the room ; while that lively insect leaped and chirped derisively, till I got him in the window-curtain, and shut him up in a little drawer, to amuse himself with postage-stamps and guide-books. The jolly old soul took it very coolly, and chirped away with all his might ; while I went to sleep, very much exhausted with my gymnastics. I forgot him till several days after, and then ran to the drawer, expecting to find the brown ballet-dancer dead ; but he popped up his head as brisk as ever, gave a skip and a chirp, and vanished as gaily as if nothing had happened. I quite missed him, and hoped he'd come again ; but he never did."

"I heard papa talking about some of the old Greek fellows, who made songs to grasshoppers, and thought a great deal of them," said Will, when they had laughed at grandma's midnight dance.

"Yes, they called them cicada ; and loved and honored the little things for their gay music. Some wore golden grasshoppers in their hair ; and the image of a cicada, sitting on a harp, was an emblem of music, which is accounted for in this way : Two musicians were trying which could play best ; and one of these chirpers flew

to the harp of Eunomus, and supplied the place of a broken string so well, that he won the prize. I remember part of a pretty little song, by one of the 'old Greek fellows,' as you say, Will, about the cicada:—

“‘ Happy creature ! what below
Can more happy live than thou ?
Sipping, on the dewy lawn,
The fragrant nectar of the dawn;
Little tales thou lov'st to sing,
Tales of mirth — an insect-king.
Thine the treasures of the field ;
All to thee the seasons yield ;
Cares nor pains to thee belong,
Thou alone art ever young ;
Rich in spirits, health thy feast,
Thou'rt a demi-god, at least.’

“There is one sort of locust which is called ‘the little fiddler,’ because it draws one leg over the other, like a fiddle-bow, they say. Another sort is called the nightingale of the fairies, for it sings when other insects sleep ; and its lively tune would do for an elfin dance.”

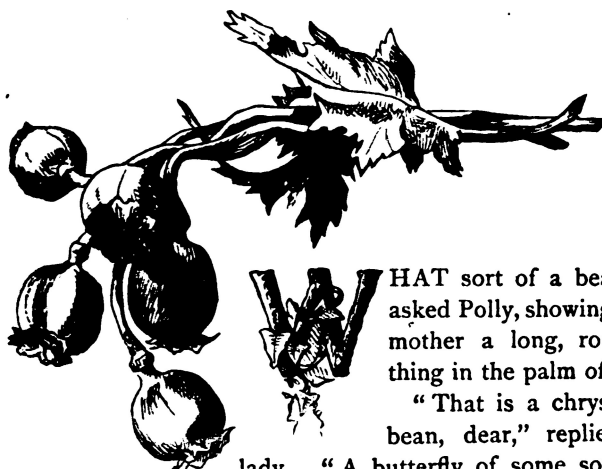
“Dear me ! How I should like to see a fairy ball,” said Polly. “I read about one once ; and they had fireflies for lamps, and crickets for pipers, and moths and mosquitoes danced ; and they had a splendid time. Do glowworms and fireflies really have fire in them, like lanterns, grandma ?”

“One of these bright creatures is called the ‘lantern-fly ;’ and is so brilliant, that in South America, the Indians tie a few to a stick, and use it as a torch, when travelling. The light is in the head of this firefly, but the glowworms have it in the body ; and it only shows when they are moving. Some are so brilliant, that people read and work by their light ; and ladies wear them in little gauze bags, sewed on their dresses, to glitter as they walk in the soft darkness of southern nights. These insects always have their small lamps trimmed and ready ; yet can hide the light in a minute, if any enemy approaches. They are very useful too, in killing the gnats, which fill the houses in the West-India Islands ; and the natives catch the pretty creatures for that purpose, enjoying their light while they devour the gnats, and make themselves both useful and agreeable.”

“I shall try that dodge tonight, when the *skets* come,” said Will, as the tea-bell rang.

WILL'S WONDER-BOOK.

v.



"WHAT sort of a bean is this?" asked Polly, showing her grandmother a long, round, brown thing in the palm of her hand.

"That is a chrysalis; not a bean, dear," replied the old lady. "A butterfly of some sort is folded up in that little dark shell; and when the time comes, it will break out, and fly away."

"Will it be a silk-making butterfly?" asked Polly, examining it curiously.

"No; I think it is a common moth, and will never make any silk. The mulberry-tree moth is the fellow for silk."

"Tell us about him," said Will. "I've got some cocoons; but I don't see how they can ever be used."

"The caterpillars weave their yellow shrouds in a very curious way; not going round and round with the thread, but backward and forward, in one place after another; so that the silk of the inner cocoon can be wound off by the yard, without turning the little ball over. The threads come through two holes in the head of the caterpillar, and are fastened together in one by a sort of glue which comes with them. These threads are gold-colored, and very, very fine; and when many of them are put together, it is the best sort for weaving. It takes the caterpillars three or four days to make the cocoons; and before the chrysalides turn to moths, and eat their way out, the cocoons are put in an oven, or hot water, which kills the creatures. Then, the flossy covering is opened at one end, the fine, inner cocoon slipped out, and unwound by very

skilful workers, who put them in hot water, and reel off the silk of twenty or thirty cocoons at a time. A good-sized cocoon gives about three hundred yards of filament, as they call it ; some, even six hundred. These fine threads are made strong enough to use, and woven into many useful and pretty things."

"What kind of looking moth is the silk moth?" asked Will.

"It is about an inch long, pale yellow, with dark streaks, wide wings, and short trunk. The eggs are about the size of mustard-seed ; and the young worms are born in a few days, if kept in a warm place. They do nothing but eat, and shed their skins, which they do four times before the caterpillar is fully grown. In about thirty-two days, it begins to spin, then turns to a chrysalis, and in a few weeks comes out a moth, if not killed. They have to be taken great care of, for they are very tender ; and cold easily kills them, or bad air, or not enough food. They have many diseases also ; and silk-feeders have anxious times till the cocoons are safely spun. I was reading a pleasant account of the Italian silk-farms, the other day ; and I will tell you about it. There are many mulberry-trees in Lombardy ; and the people import silk-worms from Japan, in the egg, and hatch them at home. The eggs are gummed on sheets of paper, and sold by the quire, and called "egg-letters." The person who writes the account, says he saw a farmhouse where the people were all busy with "egg-letters." Some worms were already grown ; and the girls were bringing baskets of clean, fresh leaves for the yellow caterpillars, who crawled in and out, eating with a rustle which could be heard,—all hard at work, getting the little silk factories inside of them into good order. In one place were some newly-hatched grubs, about as big as needles, curled up, and sharp at both ends. The farmer's wife said they needed as much care as babies, and had to be coaxed to eat, for many died, because they were too young to find their way to their food. She showed also some silk freshly unwound. A long lock of soft, golden hair it seemed, tied with a blue ribbon, and very pretty. This person next went to see the mulberry-trees, with flocks of children at work on them, laughing and shouting, and stripping the leaves like a whirlwind."

"That must be fun. I wish we had silk-farms and factories here," said Will.

"We do. The silk crop of the United States is very large ; for our worms can often be fed in the open air, and so are healthier than the European worms. The Middle and Southern States are

the best places. Dr. Franklin was interested in a silk-factory in Pennsylvania ; and a Mrs. Wright, of Columbia, made a piece of silk, sixty yards long, from cocoons of her own raising, which was used for a dress for the Queen of England. The first silk coat and stockings made in New England, were worn in 1747, by the governor, Mr. Law ; and in 1660, Charles I. wore a coronation robe made by Virginia silk-worms."

"Who first used these little fellows ?" asked Will.

"The Chinese, I believe. The Greeks and Romans used silk for a long time, before they knew much about its manufacture ; for the Romans conquered many nations, and carried home many treasures. When the Chinese peasants all wore silk, it was still so rare and costly at Rome, that one of the emperors would not allow the empress a robe of it. The Hindoos had a wild sort of silk-worm which could not be tamed ; so they set guards to keep bats away by night, and birds by day, while the worms spun on the trees they had chosen. This kind made a coarse, dark silk, which could be worn many years, without any sign of wearing out. Many of our common caterpillars spin silky threads, as you know, for you often see their nests in the orchard. The caterpillar of the gold-tail moth wraps its eggs in hair from its own body. When the little ones come out, they cover the leaves, and feed, side by side, till they are ready to spin a wide-spreading, silken tent, with rooms enough to shelter them all from enemies and bad weather. So dainty are they, that they have carpets of silk under their feet ; and in this nice little home they live merrily together till spring, when they go away and live alone till chrysalis-time comes. Caterpillars, in some places, migrate like swallows ; and I remember seeing in a paper, some years ago, an account of an army of caterpillars marching through a swamp, over the bridge, in such quantities, that people were afraid to pass till they were gone."

"I like butterflies better than 'pussy-pillars,' as I used to call them ; so I shall keep my chrysalis, and see if it won't turn out a pretty blue or yellow butterfly," said Polly, holding it carefully in her warm little hand.

"In a pretty French story, I read about a lady who used to hatch the silk-worms, by wearing them folded in flannel, in her bosom ; for she was poor, and could not afford to lose any of the precious little creatures."

"I don't like them well enough for that ; but I do wish I had a

careful of lovely butterflies, like that lady whom we saw the other day," said Polly.

"I'd get you pecks, if grandma didn't think it was wrong to put pins through 'em, and drop camphor on their heads to kill 'em," said Will.

"I will give you a book full of beautifully-painted butterflies, with stories of them, and pretty bits of poetry. Won't that satisfy you?" asked the old lady, who hated cruelty to the humblest thing that lives.

"Oh, yes! that is splendid; and I'm ever so much obliged!" cried Polly, who knew the book, and had often longed to own it.

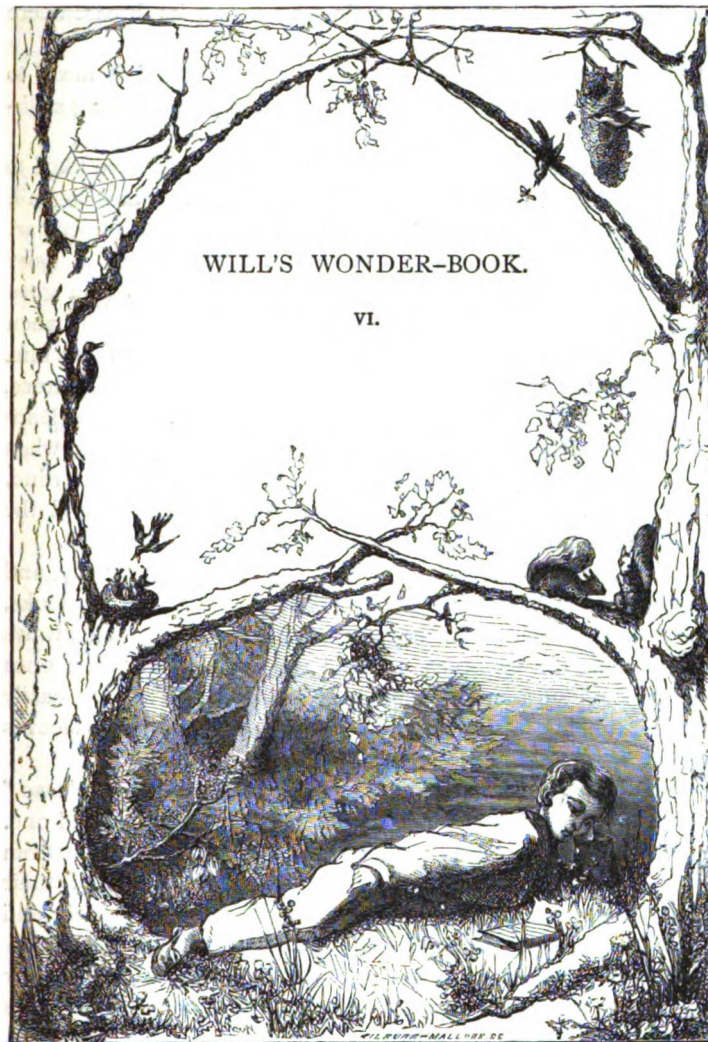
She ran to get it; and for an hour, two curly heads bent over the pages, enjoying the wonders of butterfly life, and talking learnedly of the "Purple Emperor," "Peacock," "Bufftip," "Painted Lady," "Blue Adonis," and the "Lace Wing," and "Death's Head Moths." When they came to the end, Will said, decidedly, —

"The next book I buy will be 'The Butterfly Hunters.'"

PALISSY, THE POTTER.



MORE than three hundred years ago, there lived in France, a man named Bernard Palissy. His grandfather, father, and uncles were, by trade, painters on glass; so was he. At that time, the windows in churches, castles, public buildings, and the houses of rich people, were made of painted glass. Bernard had taste and skill in drawing, and made the patterns that were to be copied on the glass. He liked, from the time he was a young boy, to wander about in the woods; and he carefully watched and studied plants, flowers, birds, insects, and rocks, till he could draw and color them with great exactness. He could also draw portraits tolerably, and learnt surveying. When he was eighteen, he left his home, and wandered about France nearly twelve years, closely observing people, buildings, animals, trees, earth, and stones, wherever he went; and for his support, painted windows and portraits, and surveyed land when he could. Then he married, and had his home in the town of Saintes, near to famous



WE have each got something for you to tell about, grandma," said Polly, one evening, showing a downy little mole which she had taken from her cat.

"Mine's a striped squirrel," added Will, displaying his with the pride of a young hunter.

"Poor little fellow! some cruel boy shot him for sport, I sup-

pose," said grandma, smoothing the soft fur on its breast where the shot went in.

Will looked as if he knew the "cruel boy," but didn't mean to betray him, for he said, hastily, — "Did you ever see a flying squirrel, ma'am?"

"Yes; it was dead, but very curious; and I should have liked to see it fly. It had large black eyes, round ears, and a tapering tail, with the hair disposed flatwise along the sides. The upper part of the body was light-brown; underneath, it was white. A hairy sort of membrane spreads along the sides of the body, and goes down to the toes on its fore and hind legs. This it spreads when flying, or leaping rather, for it keeps them up as the air lifts a kite. They can't stay up long, so they take care to start from high trees, and when they fall, cling to the lower branches. These leaps are from twelve to fourteen feet, my old book says; and when several go at once, they look like leaves blown about by the wind. When not flying, this membrane is folded up at the sides, and the creature looks much like other squirrels, except its queer tail.

"This sort, live in hollow trees, where they sleep by day, and come out toward night, very lively and busy. They live in flocks, several on one tree, which they seldom quit for the ground, always running along the branches. They have three or four little ones at a time, and store up food like other squirrels. They are easily tamed, and being fond of warmth, like to creep up people's sleeves or into their pockets."

"Our gray one used to do that. Tell about that kind, please," said Will; who didn't seem in any hurry to talk of his striped one.

"That kind come from northern climates, and they move from place to place. It is said, in Lapland, when on one of their marches they come to a river, they get pieces of bark and launch them, and, sitting in these queer boats, put up their bushy tails for sails, and cross in that way. If a storm rises, the poor little sailors are wrecked, and the people find many dead ones washed ashore. These they rejoice over, and sell their skins. Here, in parts of North America, they do mischief sometimes among the corn, by climbing up and eating the sweet kernels. Once there was a sort of law in Maryland, that every person was to bring four squirrels every year, and to be sure of it, the heads were given to the appointed person. In this way, many thousand squirrels were killed."

"I'd like to live in Maryland," muttered Will; trying to make

the dead creature sit up on a leaf, with its tail spread like the gray sailors.

"They are so active, that they are very difficult to shoot, and the best marksmen find it hard to hit them," added grandma; who hated guns, and always expected to see Will brought home in little bits, when he went out with his. "Black squirrels are said to swim great distances, using their tails as rudders. But the striped sort does not take to the water, I believe. They, like the common squirrel, gather food for winter, and carry grain home in their cheek-pouches."

"Yes; this one has got an acorn in one of its cheeks," cried Will, showing it.

"If you had found its hole, you would have found a very curious little grainery. They have many galleries, and several doors, so that when pursued they can pop in easily. There are many rooms, in each of which they put a different sort of food,—acorns in one, corn in another, nuts in a third; and so on. In winter, they live here, sleeping much, but sometimes waking, and feasting sumptuously in spite of bad weather. Fine days, they come out a little, but stay at home a good deal, as we do, and keep warm till spring. They are very fond of their young, and when the mother wishes to carry them about, she rolls each up in a ball, tail out, and takes them in her mouth, as a cat does her kittens. There used to be a family in this old elm, and I enjoyed seeing the good little mother feed and take care of her three lively babies. The cat killed the old one, and brought the tail to show me. I was very sorry; but, being an animal, puss knew no better; so I did not scold her."

Something in this speech made Will look uneasy, as he asked, anxiously, "Do the little ones starve, if the mother gets killed?"

"If they are very young, I suppose they do," began grandma; but Will cried eagerly, "This one's baby was running round with her, and getting acorns; so, I guess it won't die."

"*You* killed the mother, then?"

"Well, I didn't think; it was only for fun. I'm sorry, and I won't skin it, but make it a first-rate grave," stammered Will; looking ashamed of himself, for he did think now, and saw that *his* fun was pain and sorrow, death and helplessness, to poor Mrs. Squirrel and her little family.

"Don't look sober at him, he's sorry, and won't do it any more. Tell me if my mole is as nice as he looks?" said Polly; wishing to relieve Will.

Grandma smiled again, and took the plump, velvety mole in her hand.

"Yes ; he's a busy little fellow, and does a deal of hard work with these strong fore-feet and snout. Its eyes are so small that it is sometimes thought they have none, but they have ; see, here they are, tiny but bright, and half hidden in the thick fur. They hear wonderfully quick, and don't need eyes much, living as they do in the dark. They make arches of earth under ground, with pillars and partitions, weaving in grass and roots, and beating the dirt well to make it solid enough to keep out water. Under the main arch they make a mound, and spread a soft bed of leaves for the little ones, who lie high and dry, no matter how damp the weather. Many paths and galleries branch from the nest, and along these the moles run in and out, getting food, and attending to their affairs. In summer, they like meadows to burrow in, the earth being soft. They dig with their paws, and push the dirt up to get it out of the way, which makes what are called 'mole-hills.' They come out at night to hunt for worms, which they skin in a queer way before eating, and enjoy, as much as the owls enjoy eating the fat moles themselves. They are very affectionate, go in pairs, and don't care for any society beyond their family. In their dark little houses, they live happily together, with plenty to eat, and few enemies to disturb them ; for they shut up the doors when they like, and revel down below, unless water or a spade comes to trouble them."

"How do you catch them?" asked Will.

"The cat will tell you," answered the old lady, slyly.

"No ; that isn't fair ! I won't try it, if you'll tell, grandma."

"Well, Dr. Darwin says, the best way is, to go early in the day, when the moles are working, and turn up one of their hills with a spade, then pour water into the hole, and out pops little moley in such a great fright, that he may be easily caught. When first taken, it squeaks shrilly, and fights with teeth and claws, for though gentle at home, they can be very fierce abroad, and often have battles with strange moles. A viper, a toad, and a mole were put in a cage, and the mole at once killed the two other prisoners."

"Smart little thing ! I thought moles were a sort of mouse ; they look like mice," said Polly, smoothing the velvet coat of her new acquaintance, while pussy sat purring with all her might, hoping to recover her lost supper.

"No ; I believe they belong to the rat family, as they gnaw, and moles do not."

"What opera tune do young mice sing to their mothers?" broke in Will. "'Hear me, Norma (gnaw, ma).'" Now, go on about mice, the field kind ; we know house-mice, don't we, puss?"

"Field-mice have holes in the ground, and lay up nuts and corn. These holes are often divided into two apartments ; one is a living-room, the other a dining-room, quite genteel and proper. As they have eight or ten little ones at once, it is a very sensible arrangement, for Mrs. Mouse could never get her meals with so many children under her feet. The nest of the harvest-mouse is very curious, for it is made of grass and straw, plaited together, perfectly round, and about as big as a cricket-ball. The door of the one I saw was so well hidden, that no one could find it ; and the nest was so firm and round, that it rolled across a table without breaking or spilling the eight 'little blind mice' inside. This nest was found in an English wheat-field, hanging to a thistle. These mice use these nests in summer, and in winter live in the corn-ricks where they are carried at harvest-time."

"I like mice when they don't hop quick, and scare me. I wish I had a tame one to play with, they are so soft and cunning," said Polly.

"I read once about a Scotchman, who trained two mice to spin cotton. The machinery was arranged, so that each of these common mice could twist and reel one hundred or more threads a day ; and to do this, the tiny little fellows had each to run over ten miles a day, in their tiny tread-mill. A half-penny worth of oat-meal fed one for a month, and at this rate, each mousie earned about six shillings a year."

As grandma paused, the children thanked her, and marched soberly away to the garden, to bury the mole and squirrel in the greenest of graves,—a proceeding which much disgusted and disappointed the cat.

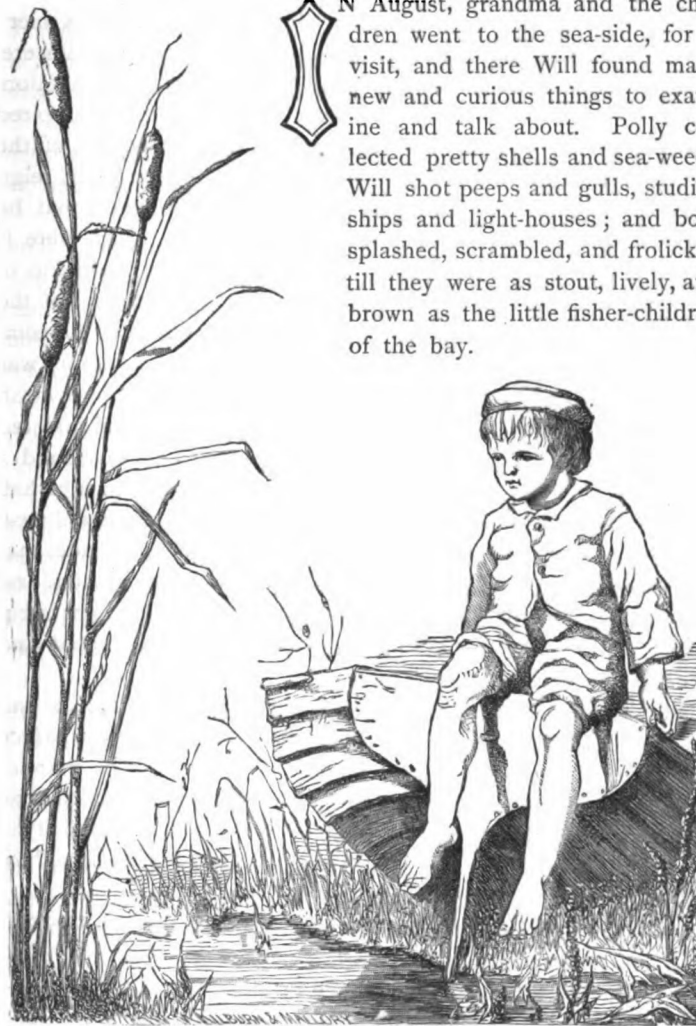


WILL'S WONDER-BOOK.

VII.



IN August, grandma and the children went to the sea-side, for a visit, and there Will found many new and curious things to examine and talk about. Polly collected pretty shells and sea-weed ; Will shot peeps and gulls, studied ships and light-houses ; and both splashed, scrambled, and frolicked till they were as stout, lively, and brown as the little fisher-children of the bay.



Grandma used to sit in a comfortable cranny of the rocks, knitting or reading, while the young folks played ; and when they

grew tired of climbing about, they brought their new-found treasures to her, and rested, while she told stories about them.

"I've got a live snail. I picked him off a rock, and wanted to see his horns ; but he shut himself up in a great hurry, and I can't make him come out," said Will, tapping at the little brown door which Mr. Snail had shut in his face.

"Put him in that pool of water, and let him alone ; then he will pop his head out, and you can watch him at your ease," said grandma, moving Polly's fleet of clam-shells to make room for the snail.

"Has he got any eyes ? How does he walk ? Can't he ever take his shell off ?" asked Will, lying down on the warm rock, to enjoy his luncheon as luxuriously as possible.

"Yes ; he has eyes at the ends of his two longest horns. They look like two black dots ; but they are regular eyes, and the snail can move them to and fro, or draw them out of sight, as it likes. Under the two smaller horns is its mouth ; and though it seems too soft to bite anything, yet it has eight teeth, and chews leaves, and even bites bits off its own shell with them."

"Is it true that they can mend their shells ? I trod on one once, and father said the snail would mend it if I let it be," said Polly, who was making paper sailors to man her pretty white boats.

"They have a slimy substance which hardens when exposed to the air, and with this they mend their broken shells. Even when they seemed crushed to pieces, they can repair the damage, though you can see the places which they mend, for the new shell is fresher than the old ; so, the little patches show. They can't grow an entirely fresh shell, however, for the experiment was tried, and failed. Swammerdom carefully took off a shell, and hoped the snail would make a new one. The poor thing tried, but died of cold before it was half done."

"Are these little ones the baby-snails ?" asked Will, fishing up some tiny white shells from the pool.

"I think so. The old ones lay eggs as big as small peas, and put them under a clod of earth, or in some cool, moist place. From these eggs are hatched little snails, with their houses all ready on their backs. That sort is the garden-snail. I don't know about the sea-snails, but fancy they are a good deal alike. This kind do harm among the plants, spoiling fruit and young leaves. Another sort are very large, and used to be eaten in Rome. They had *snaileries*, called *Cochlearia*, where these crea-

tures were kept, and fed on bran and wine, and when fat enough, boiled or fried, and considered great delicacies."

"Don't believe I should like the slimy things. I'm afraid my big one is dead ; it don't stir," said Will, poking the snail, who appeared to have shut up his house for the season.

"Don't be impatient ; he'll come when he is ready. No fear of his being dead ; for snails can bear a good deal, if all the stories are true. My old book gives two anecdotes, which may interest you. One is of a man, who kept some snails for fifteen years, and then gave them to his little son to play with, supposing that of course the creatures were dead long ago. The boy put them in a basin of water, and left them there. Next day, he came running to tell his father that the shells were walking about the sides of the bowl. M. Simon could not believe it ; but, as they lived in the city, he knew the boy could not have found any other snails ; and, strange as it seemed, there were the old ones, promenading round the basin, as lively as possible, after their fifteen years' nap. They were kept and shown as great curiosities ; and if the tale was true, they certainly *were* remarkable snails. Another person was making a shell-tower for an ornament ; and finding her pretty pebbles and sea-shells gave out, she went into the garden, and got a handful of snails. In order to kill them before sticking them on the tower, she poured boiling water over them, and set the bowl away with her other things, to be ready to finish the work next day. But, when she went to the place in the morning, instead of being dead, the snails were out of the basin, sticking all about the table, some examining the tower, and others actually eating the paste that they were to be stuck on with. Having a kind heart, the lady picked them all up, and carried them back to the garden, finishing her work with less pretty shells, rather than be cruel enough to boil the poor snails over again."

"Tell about the little seal we saw down on the wharf. The man keeps him in a great cask, and feeds him with fish ; and he's very funny, with no ears, and big eyes, and only two flippers, or feet. I poked him, and he made a queer noise, and dived out of sight. But presently, he popped his head up, and winked at us, and wiggled his nose, as he wanted more fish. I asked the man lots of questions ; but he only said he caught little Jack in the bay.

As Polly stopped for breath, grandpa replied, "The common seal is called the sea-calf, and inhabit all the European seas. They are very large, some of them, with round heads, pretty black

eyes, and no visible ears. The front legs are very short, and the back ones are only used in swimming, being close to the tail. They live on fish ; in summer, going on shore a good deal, but taking to the sea in winter. They swim and dive very swiftly, and are hunted for their skins and oil. The Greenlanders could hardly get on without them, they are so useful in many ways. The flesh serves for food ; the fat makes oil for lamps, fires, and cooking ; the fibres of the sinews are used for thread ; the skins for carpets, clothes, tents, and boat-coverings ; and of the bones, they make tools of all sorts."

"How do they hunt them?" asked Will, with his mouth full.

"The men go at night to the caves where the seals live in great numbers. Armed with torches, they row in as far as they can, and getting into good places, begin to shout all at once. This wakes and frightens the seals, who rush out as fast as they can, and in the confusion are easily killed by striking them on the nose, where a slight blow soon finishes them.

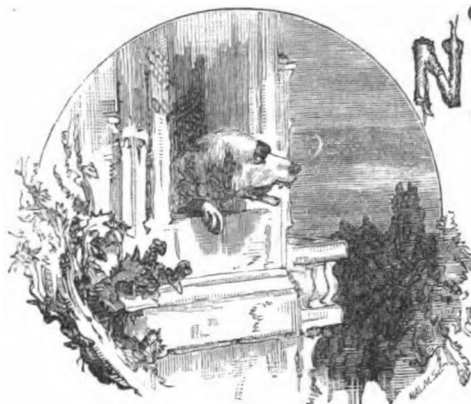
"The Ursine seals live in the neighborhood of Kamtchatka. They are very large and fierce, and fight bravely before they can be taken. They live in families, and are very affectionate. The cubs are as playful as puppies, and have mock-fights ; while the parents look on with pleasure, caressing those who win. They make a loud noise when angry ; low like a cow, when happy ; and wail dismally if sick or wounded. Some kinds are easily tamed, and will learn to love and follow a master, like dogs. I saw one once who went creeping about the house when it liked to get out of its tub. It would kiss its keeper with a funny little smack, sigh and shed tears when he left it, and play several tricks if ordered. It fell ill, and its pretty eyes were very pathetic as they followed us about, seeming to ask help. We could do nothing for it, and it died ; but my friend kept its skin, which was as soft as velvet.

"I shall enjoy seeing Jack more than ever, now I know something about him. I'm afraid he's homesick, for he sighs and looks as if he wanted his mother. I shall ask the man to let him go ; and if he won't, I'll get papa to buy Jack, and then we'll let him swim away."

Will was so interested in Polly's plan about the seal, that he forgot to look at his snail, till grandma told him the little gentleman was out ; and there he was, sure enough, moving his horns about, and creeping slowly toward a clam-shell, as if anxious to get aboard, and sail home to his native pool.

WILL'S WONDER-BOOK.

VIII.



O more pleasant out-of-door talks now," said Will, dolefully, as he looked at the frost-bitten garden, and listened to the wild November rain.

"We can remember the pleasant things, and read about them, for grandma says she will lend us the books and explain the pictures," returned Polly,

who sat rocking cosily in her little chair before the fire, enjoying the bright blaze as much as the plump pussy dozing in her lap.

"I'd rather see and hear about live things. I wish birds and bugs and animals didn't fly away, or go to sleep all winter ; for it don't leave us any queer or interesting things to examine and talk about. Can't you think of some nice live animal or insect to tell of, grandma ? I feel like hearing stories, and so does Polly."

As Will spoke, grandma put down her book, and answered, kindly, "All animals don't migrate or sleep. I see two interesting ones in the room now."

The children stared about them, but did not guess what she meant.

"Is it the flies on the window-pane, and the mice in the wall ?" asked Will.

"No ; it's two larger creatures."

"She means us !" cried Polly, thinking she had got it.

"I said animals ; you are human beings. Don't you find Puss and Snap interesting ?" said grandma, pointing to the dog, curled up under the sofa, and Mrs. Mouser, purring luxuriously on her little mistress's knee.

"But we know all about them."

"Not everything about their relations ; for your pets are rather stupid, commonplace specimens. I read some pleasant anecdotes about cats and dogs, the other day, which will show you how faithful, wise, and affectionate these dumb creatures are."

"We should like that," said both the children, as Polly put down the cat's-cradle she was making, and Will spread himself on the rug, with Snap at his side.

"Which shall I tell first?"

"Cats for Polly, dogs for me ; and tell Polly's first," said Will, for, in learning to be kind to helpless creatures, he had learned to be kind to every one, and that is true politeness.

"At a certain convent in Paris, the cook used to divide the dinner into a dozen plates, and the brothers would come and get their portions. One day, while the cook went to ring the bell in the hall to call them, some one stole one of the bits of meat. This happened several times ; and the cook, at last, resolved to watch in the kitchen, and see who did it. While he stayed in the room, no one came, and, the meat was all safe. So, he decided to stay always, and had a whistle to call the brothers. But the sly thief was not cheated in this way ; and soon after, while Mr. Cook was guarding the dinner, the door-bell rang, and he had to go. Nobody was at the door, and he ran back in a rage, to find one plate empty again. Next day, when the bell rang, instead of answering it, the cook hid in a closet, and a minute after the bell had sounded, in at the window bounded the big cat, and whisked out again with her prize. Anxious to see how she managed the bell, the cook posted himself at a side-window, from which he could see the door. In France, many of the bells are attached to ropes, such as we have inside our houses. Pussy ran and caught the string in her paws, took a good swing which jingled the bell, and then scampered away to get her meat. The monks were so amused at her cunning, that they ordered an extra dish to be set for her every day."

"Well, that's funny ; but if remarkable cats do such things, I'm glad mine *is* stupid," said Polly, stroking her pet, who purred louder than ever, as if she quite agreed with her.

"The other story I read was of an English cat, whose master taught her to catch birds and bring them to him without hurting them ; for he kept many in cages, to study their ways before he killed and stuffed them. This cat formed a friendship with a little dog in the house, and used to invite him to dine with her whenever she had anything nice. The dog was a naughty little fellow, always getting into disgrace, and being whipped. The switch used on these occasions was kept in a corner of the kitchen ; and this stick used to vanish so mysteriously that the master could not understand it. There were no children about ;

the servants disliked the dog, and would not have so befriended him ; yet stick after stick disappeared, apparently without hands. At last, it was discovered that the affectionate old cat carried it off in her mouth, rather than let her little friend be whipped."

"Three cheers for pussy!" cried Polly ; and her own cat took the compliment to herself, moving her tail with a stately air, and opening her yellow eyes like a pair of little moons.

"My other story is about a dog, and was written by a famous Dr. Brown. He was walking in a London street, when something gently pulled him by the leg ; and looking down, he saw a dirty, shabby little terrier, who watched him with imploring eyes, and began to beg. The kind gentleman patted the poor thing, and went on ; but the gentle nip came again, and again the intelligent eyes seemed imploring something, and the muddy little paws begged eagerly. The man stopped, and looked at the dog, trying to see what he wanted. This seemed to satisfy the terrier, who ran off in a hurry, stopping now and then to look back, and bark, as if saying, 'Come on ; oh, *do* come on!' Dr. Brown followed, till they came to the back gate of an old empty house. Here, the dog ran under the gate, and barked on the other side, as if inviting his new friend in. The gate was locked, too high to climb over, and the gentleman was about to give it up, when the dog's voice was heard at another part of the wall, whining eagerly. Dr. Brown followed the sound, and found a broken place where he could squeeze through. Little Nip (as he was afterward named), was delighted at this, and ran frisking to a shed, where stood an old coach-body, without wheels. Looking in, Dr. Brown saw a fine pointer, with five puppies, the poor mother half-starved, and full of anxiety about her little ones, who were howling with hunger. A sad sight, for it was evident that the mother dared not leave her family long enough to find food for herself, and there was no one to feed and comfort her. Good little Nip had done his best ; but, as he had no home or master of his own, he could not help much, and so had gone to find better friends for the starving family. Of course, the kind man took them all home ; and you can imagine how happy the poor mother was when she was well fed, and her yelping children fast asleep in a warm bed. Being a valuable dog, who had probably been lost, she and her puppies were sold after a time ; but Nip was kept by Dr. Brown, and for sixteen years, was a good, happy, and faithful little friend."

"By George ! I like that !" cried Will, so loud that Snap

jumped up with a bark, as if he said, "So do I." "Now, old fellow, you just remember that story; and whenever you find any poor, hurt, or hungry dogs, you let me know, and we'll see to 'em," added Will; and Snap listened with so much intelligence in his soft brown eyes, that it seemed as if he understood what was said to him; for he wagged his tail, and licked his master's face, in a grateful and approving manner.

"Since we began our talks this summer, I have set up a scrap-book," said grandma, "in which I put all the anecdotes about birds, insects, and animals, that I find in the papers; and many of the things I have told you came from that. I think it would be a good plan for you to help me fill my book, by writing down all the little discoveries you make about the habits of creatures, and saving any accounts of them you may come across, and the stories about them others tell you. In this way, we shall make a pleasant book, which we shall enjoy reading, and showing to our friends."

"I'd like that," said Polly; "for now I've got fond of watching bugs and flies, and all sorts of creatures I used to hate; and I see so many new and pretty things about them, that I want other children to know how nice they are."

"The fellows at our school often tell jolly stories about their dogs and pets, that I like to hear; so, I'll get them to help me, and when we go hunting and fishing, we'll remember about the creatures we see, and write it down," added Will, pleased with the new idea.

"I think I will take for you a new little paper, called 'Our Dumb Animals,' which is got up by some wise and charitable gentlemen, who hope to help the poor creatures who cannot help themselves, by lessening the wrongs done them through ignorance, carelessness, or cruelty. In this excellent paper, we shall find many touching stories and interesting facts for our scrap-book, and can lend it, besides," said grandma, glad to see that her simple little experiment had done some good to the children. For now, Will shot no more song-birds, never stoned frogs, drowned cats, or whipped his pony; and Polly neither screamed at spiders, nor ran away from toads; but found something beautiful or interesting in all these little neighbors, and was learning the sweetest charity toward whatever was ugly, weak, or friendless.

"What will we call the scraps when we get all the pages full?" asked Polly.

"As he will probably do most toward filling it," said grandma, "we will call it 'Will's Wonder-Book.'"